The Builder.

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THOSE among our readers who remember the remarks we have made, from time to time, on the antagonistic position of the Referees and the Registrar, at the Office of Metropolitan Buildings, the constantly-occurring appeals for decision of their differences to the Office of Works, the consequent delay, and contradictory awards, will not be surprised to learn that an inquiry has been instituted by Lord Seymour, as Chief Commissioner of Works, to discover, if possible, where the fault lies. Two gentlemen (whether the right men or not we will not now inquire) have been appointed to hear and examine the statements of the parties concerned, and to decide, if possible, whether the evil is to be attributed to provisions in the Act, or to the officers personally. If the former, an endeavour will be made, in the new Bill, to produce a different result: if the latter, there will probably be changes in the office. The inquiry has been conducted in secresy, and we shall not render that abortive by communicating any of the facts that have transpired, or speculate on the probable issue. Suffice it, that we set at rest by this statement some unfounded rumours, in connection with the office, that have been forwarded to us. As respects the clauses in the Bill brought forward in 1849 (and now pending), which would transform the Buildings' office into a law court, make the registrar sole arbitrator, and the referees his clerks, the objection on the part of the builders is, as might have been expected, very decided. Our own opinion on the point we expressed at length on the first appearance of the Bill.

An argument against the exemption of the works of railway companies from the supervision of the official referees, has been afforded by the bridge belonging to the South-Eastern Railway, over Joiner-street, Tooley-street. One of the patent girders, it will be remembered, failed in October last,* and the safety of the remaining girders being questioned, especially under the circumstances in which, through the alteration of the station, they will now be placed, Mr. Brunel and Sir John Rennie were appointed to inquire and report on the subject. The statement by Mr. Barlow, the company's engineer, that there were 120 tons weight on the girder when it broke, was questioned in our journal, and a doubt expressed whether the engineer could wisely test the remaining girders with half that weight. Last week the remaining girders were tested by placing carefully, upon a certain defined space of the upper surface of the bridge, iron chairs of known weight. When 148 tons were upon the area the two girders broke. One, 42 feet 2 inches bearing, it is calculated, had upon it 67 tons, 3 cwt., the other, 46 feet bearing, 60 tons, 12 cwt. In this experiment, it must be remembered, the load was applied uniformly all over the girder, and the road-construction, which is of considerable weight, was first removed.

The outside girder, still remaining, has a bearing of 57 feet 3 inches, and is only of the same strength and construction. We have not yet seen Messrs. Brunel and Rennie's report but do not hesitate to assume that they will assert the necessity of strengthening the bridge.

The occasion for caution, which we felt it to be our duty to urge upon the devisers and contractors for the iron building in Hyde-park, is now being repeated by some of our contemporaries. We have received several letters, too, on the subject from professional coadjutors. One of the least urgent amongst them says:—

"On examining the construction of the building for the Exhibition of 1851, from the drawings exhibited at the Society of Arts, the idea suggests itself that *additional strength* is required in the construction of the ironwork for the centre avenue: when you bear in mind its great span (75 feet), and the weight it would have to support, independently of other circumstances it would also have to contend against, some precaution appears necessary to be taken. I would therefore throw out the suggestion, whether it might not be advisable to introduce circular ribs between the pillars and the girders, with ornamental spandrils, which would not only strengthen the present construction, but also improve the general appearance of the whole. With reference to the gallery floors, perhaps, the boards there should be laid with apertures between them, to enable the dust to pass through into an enclosed space underneath, in order to prevent the dust and dirt from being swept or falling on the different articles underneath. How is the snow to be got off the roof, and the glass cleared?"

There are other parts of the construction, however, which need serious attention, as must be felt by any who will observe the great heights of the columns, tier over tier, in the centre, the manner in which the girders are secured to the columns, the size and weight of the wooden ribs prepared to form the ends of the transept, the nature of the foundation, and the strains to which the building will be subjected. We make these remarks in no cavilling spirit, but from a feeling of duty; not to excite any alarm, but to prevent a disaster.* Some additional precautions have been taken since our first comments, but others are still necessary.

Against our will we are forced, further, to object to the mode of painting proposed by Mr. Owen Jones, to whom it seems this portion of the undertaking has been confided. Anything more vulgar than the specimen put up we have not seen for some time.

We must except, however, from this comparison, the *decoration* of the pendentives of the Whittington Club's great room, in the Strand, the once famous "Crown and Anchor" meeting room. This excellent and thriving club,† have spent about 400*l.* in the decoration of the room, under the direction of Mr. Freeman, architect, and they opened it to the members last week. The tone of the whole is somewhat sickly: contrasts have been feared. What marble the pilasters are veined to represent it is hard to divine. We should not have made any remark, however, but for the unsightly caricatures, in the shape of boys with the legs of gouty men (representing Science, Music, &c.), painted on the pendentives of the cupola. In these times when every tavern and tea-garden begins to exhibit an approach to artistical decoration, such monstrosities must not be permitted in an educational institution like the Whittington Club. That respectable decorators like Messrs. Trollope, who were employed, could have left them as they are surprises us. If they have any regard for their own reputation, they will forthwith remove them and put in something like art.

Before concluding our gossip, we would say a few words to the correspondents who have addressed us in consequence of a brief remark on *Malvern Abbey Church, Worcestershire*, which appeared in a recent number of THE BUILDER. They all admit the main point of objection, namely, that the works have been carried on without professional superintendence, and one of them will not disguise the fact, he says, that one of the main arches exposed to view by lowering the organ gallery has been unnecessarily blocked up again by a painted lion and unicorn. A building such as this belongs to posterity, and should be treated with the utmost care. Our end will be answered, if the remark should lead the zealous churchwardens to take proper advice as to the future works which ought shortly to be commenced. The beautiful tower is in a miserable condition, and seems to want immediate attention.

Malvern is a cross church, as many of our readers will remember, with the tower at the *crux*. The nave-piers, and arches, are Norman, but the exterior of the church is Perpendicular, and is ascribed to Sir Reginald Bray, who designed Henry the Seventh's Chapel at Westminster. The chancel is a fine composition; the clerestory windows throughout are very large; the north porch, which is at the extreme west end, a very interesting specimen. There was a series of memorial windows in the church, but in those times when mistaken zeal

> "Rent
> Altar and screen and ornament,
> And peasant hands the tombs o'erthrew,"

these were greatly destroyed: much of the old glass, however, yet remains, and some modern glass has been added. Some of the figures in the old windows were engraved by Strutt for his "Manners and Customs," and by John Carter, in his "Ancient Sculpture and Painting." There is an illustrated account of the church in Neale's "Views of Collegiate Churches." The faldstool engraved in "The Glossary" is from the stained glass here: many of the paving-tiles remaining are exceedingly curious. Again we say to the churchwardens: Let nothing be done to this interesting old structure but under proper advice: better be idle than do harm.

THE GENEALOGY OF THE FINE ARTS.

MY endeavour in the following remarks is to sketch a theory of art generally, which I attempt under the conviction that some of its branches are not fully appreciated even by those who take an interest in its manifestations. By a large proportion of educated persons, the arts of painting and sculpture are classed among mere amusements, or hobbies, and considered only as vehicles for the display of talent, affording at the most a refined species of pleasure to the observer. Of architecture they have no idea as one of the means of intellectual enjoyment and improvement to man. They see nothing in it but brick or stone, and wood, formed and arranged to serve certain purposes of utility, presenting at the farthest a clue to the condition, as to wealth or station, of the occupant of the structure. Very few, I apprehend, think of art as of an influence to move the heart, or suppose it has functions to perform, and ends to fulfil, in any way connected with the moral sense and intellectual progress of mankind.

This has, I suspect, been a result of the excessive commercial development of our coun-

* See pp. 509 and 524.

* According to informants, a girder failed last week under a comparatively trifling weight, and led to a fatal accident. To an occurence of this sort, however, no importance need be attached, excepting as to the personal result.

† It has now about 1,600 members. In the new list of lectures we observe Mr. Donaldson is announced for two "On the Manners and Customs of the Ancient and Mediæval Times: as illustrated in their Sacred and Civil Edifices."

try; and it is perhaps natural, until the general mind become fully awake to the importance of art-culture, that it should lean most to those mechanical, commercial, and other sciences, which have mainly contributed to our national importance.

But true greatness in a people must arise from the cultivation of all the faculties of the mind. It takes both "the beautiful and the useful to form a man:" the mind, like the body, must grow in all directions;—the moral, intellectual, and imaginative faculties being alike developed. We must cultivate the entire man, and bring ourselves in contact with the universe in every possible point; and not only endeavour to expand our own natures, but introduce the principle into every system of education; so that all may enjoy, not a partial, but, as far as practicable, a complete and universal culture.

It appears probable that a much greater uniformity in education existed among the classic ancients, when we consider how equal was their encouragement of the different branches of intellectual pursuit. In Greece we perceive that not only literature, philosophy, and science, but the fine arts, were carried to the highest point of perfection. This, the multitude of exquisite monuments of art still existing fully attest. The brilliant period from Homer to Alexander was characterized by this uniform mental pursuit. Learning and literary composition—every species of philosophy—eloquence—the art of war—are known to have arrived at the highest degree of perfection, and yet were not in advance of sculpture and architecture; illustrated at this time by the chisel of Phidias. In fine, the whole circle of arts and sciences may be said to have disputed for pre-eminence with each other. We may apply the same remarks to the Romans in the reigns of Augustus and Adrian. At the same time, the art they cultivated was not *fine* art only. The aqueducts, bridges, and cloacæ of the latter people have been the models of the grandest works of a similar nature in modern Europe.

On the relative importance of art,—its rank among the various branches of human pursuit, I will content myself by quoting a celebrated living writer:—"There are two avenues from the little passions and drear calamities of earth, both lead towards Heaven and away from Hell,—art and science; but art is more godlike than science; science discovers,—art creates. The astronomer who catalogues the stars cannot add one atom to the universe. The poet can call a universe from the atom. The chemist may heal with his drugs the infirmities of the human form: the painter or the sculptor fixes into everlasting youth, forms divine, which no disease can ravage, and no years impair."

Schiller, in his philosophical and æsthetic letters, insists upon the necessity of æsthetic as a preparation and foundation for moral culture, and considers that until we are so developed we cannot be morally free, and, by consequence, not responsible, as the will has no sphere in which to operate. And Sir Joshua Reynolds, even in his day, considered an establishment for such culture as a subordinate school of morality. He contended that it was necessary to the happiness of mankind and security of society, that the mind should be elevated to the idea of general beauty, as a mean of giving it its proper superiority over the common scenes and temptations of life.

The Platonists looked upon the cultivation of the understanding, by the study of science, as no less necessary than the practice of virtue, to qualify a human soul for the enjoyment of a future state; and Plato himself has called mathematical demonstrations the cathartics of the soul, as being the most proper means to free it from error, and give it a relish of truth. May not, I would ask, a cultivation of the sense of beauty be deemed a more approximate means to this end? Real works of art should be the most intimate companions of the soul: the man to whom they are mute, to whom they reveal nothing, will learn little of a moral or spiritual nature from books, and must have but faint notions of his connection with external nature,—of his relation to the universe.

I know there are persons so absorbed in the ordinary business of life, that this would sound in their ears like an unknown tongue. There are not wanting men, slaves of utility, who would crush every emotion of the heart as weakness, and quench every spark of imagination. They admire the powers and faculties that, in the present state of society, most rapidly lead to wealth, and despise those which have been the brightest glory of our race, and the chief spur of civilization. Such persons will, however, in common with others, look back with admiration and pride at the great achievements of men in the past history of the world, and particularly of their own countrymen; forgetting that from these very faculties they affect to despise, have chiefly resulted all that dazzles in the past, or in the present possesses any real dignity or importance. We feel the limits of the human understanding, and, the more profound our researches in philosophy, the more palpably we experience it. We see the boundary-line beyond which our minds cannot penetrate; but we are, at the same time, conscious of a void beyond that limit, which superior intelligence might penetrate. It is by the creative faculties that this is to be filled up; hence their advantage over reason. The imagination, swifter than the wings of the morning, transports us through the universe. The reason is limited, but the imagination is boundless. By it we approach the Infinite, and are linked to the Divinity. It is to other than reason that the heroic deeds of those great spirits who have created epochs in chronology are to be ascribed. The great wonders of the ancient world were not the result of reason. The greatness of man is most apparent when he works from the feelings—his power over his fellows more complete when he holds them by the chords of the heart and imagination.

The Arts, which will be treated upon in the following paper, are those of Architecture, Painting, Sculpture, Poetry, Music; the latter two will be occasionally referred to, but my attention will be chiefly given to the three former. To form the genealogical tree of art, my course will be to trace its essence or principle—the beautiful—from its source; which will divide the subject into three distinct branches:—there are three realms of the beautiful, viz. Nature; the Human Mind, or Imagination; and Art itself.

On the first head little need be said. The most interesting of the three kingdoms of Nature is the animal: the highest species of beauty is to be found in that department. The human form and face divine,—the index of the character and passions,—is the chief subject involved in the style called historic, the highest walk of art. The beauty exhibited by the other creatures of God is various, but harmonious. Among the savage tribes of the forest, in the depths of the sea, in the regions of the air, beauty reigns and rules in every mood:—all is animated grace. What beauty is renewed to us every morning! The eastern sky is a flood of glory, and the morning dew sprinkles the earth with diamonds. The glory is repeated in the evening, but is only a prelude—a mere earthly pageant—to the more glorious exhibition of the starry firmament—

> "When the heavens
> Are thronged with constellations, and the sea
> Strewn with their images."

This is the sublimest picture, the highest class of art, in the gallery of inanimate nature. Philosophy has no power equal to these luminaries of night, these monitors of the sky, to elevate the heart above the cares and anxieties of life.

Beauty is to be found in nature in all seasons; it is not the nymph of the summer, but the goddess of the year. From green-robed Spring, whose voice,

> "More sweet than softest touch of Doric reed,
> Or Lydian flute, can soothe the maddening winds,"

to Autumn, clad in the hues of the rainbow: nor beneath Winter's snowy mantle and icy zone is it altogether concealed.

But the theme is endless: it is vain to enter into details: in the most insignificant objects of nature we find the traces of the beautiful. What delightful curves in leaves, shells, grasses! What exquisite harmony of colour also in some of the most ordinary plants and flowers! in the plumage of the feathered tribe! seeming a link between earthly and ethereal creatures; beauties greater and more numerous than appear to the common observer; beauties that only the artist can rightly appreciate; for the eye requires training and practice to see fully the beauties of creation. How wonderful, again, is the effect of motion upon all! What elegance in the movements of some animals, particularly of the human form. A charm ever new and inexhaustible. Beauty is but half developed when at rest: Æneas, in Virgil, knew Venus to be a goddess at first sight, but only discovered her to be the goddess of beauty when she moved:—

> "And by her graceful walk, the queen of love is known."

Motion generally is expressive or suggestive of beauty:—

> "Thou canst not wave thy staff in the air,
> Or dip thy paddle in the lake,
> But it forms the bow of beauty there,
> And the ripples in rhymes the oar forsake."

After a survey of the glories of creation, the thought that first suggests itself to a reflective mind is the general indifference of mankind to it. The beautiful in nature, like the beautiful in art, has too few, and among these too many lukewarm, worshippers. For too many, nature may be said to waste its loveliness on the desert air. Beauty is above, around, and beneath us, and we do not heed it. We tread on beauty and know it not. Many are born, live, and pass away, with scarce a glance on the beautiful world in which they live. There are many fossils, plants, and other works of nature, that we scarcely notice, or at best with indifference, which, if they were produced by art, would be preserved as treasures, and admired without bounds. We think little of nature's beauties, perhaps, from their being so commonly about us. How often do we find men who would stand in apparent rapture before a painted landscape, that would pass the original with indifference; and be unmoved by the sublimest effect of sunshine and shadow when presented by nature! Showing, however, that it was a conventional, rather than a true and genuine, feeling for the beautiful, by which they were excited. How often do we find the physiologist in ecstacies with the scientific beauty of a subject, while utterly heedless of the charms that address him through the medium of form! The botanist also, whilst busy defining and classifying, too frequently loses some part of his enjoyment, by the non-contemplation of the æsthetic, along with the structural, grace; forgetting the marriage of beauty and science; forgetting that nature speaks through these creatures to the eye and the heart, as well as to the reason and intellect, by their transcendent beauty of form and colour. At the same time it must be granted that the pleasure of the artist would be enhanced by the scientific knowledge of fitness,—adaptation of means to end,—and the union of the various parts to the accomplishment of the contemplated result, which natural objects exhibit. Like poetry and music, the æsthetic and scientific beauties of objects may be said to stimulate each other, raise the thoughts, and enhance the pleasure of the spectator.

In truly great minds, however, in all ages of the world, there has existed a deep-rooted love and veneration of nature. Milton considered it "an injury and sullenness against nature, not to go out and see her riches, and partake of her rejoicings with heaven and earth." "Here," exclaims an old English poet, in reference to woods,—"Here is the true Parnassus, Castalia, and the Muses." And so charmed were the classic poets with the natural shade of trees, that they gave to temples the name of groves. In the vistas and shades of trees, poets have composed verses which animated their countrymen to heroic and glorious actions. Here orators have delivered their discourses, and the profoundest philosophers have been so enamoured of nature's beauties as to be content to pass their lives in her bosom, in repose and contemplation. Among the luminaries of the middle ages, how prized must have been flowers, since we find them named after whatever was most valued. Nature is the great storehouse of art, and in the infancy of the latter, and prior to the refined pleasures which art affords, being extensively diffused among any country or people,

the innate love of the beautiful would, of course, be more concentrated upon nature. Accordingly, in the early period of mankind, as also in the infancy of different states, large use was made of beautiful natural objects in seasons of festivity, as emblems of happiness and rejoicing. "Let us crown ourselves," says the author of the Book of Wisdom, "with rosebuds and flowers before they wither." Early nations in all their ceremonies, whether of the banquet, the altar, or the tomb, made large use of flowers as decorations. Among the classical ancients, the wreath of the victor, and other rewards of merit, were arboraceous, and this led to their extensive employment, as symbols, in architectural decorations.

I come now to the second branch of my subject, viz.—the beautiful in the Human Mind or Imagination.

"Every star in Heaven," says Emerson, "is disconcerted and insatiable; gravitation and chemistry cannot content them; ever they woo and court the eye of every beholder; every man that comes into the world they seek to fascinate and possess,—to pass into his mind, for they desire to republish themselves in a more delicate world than that they occupy. It is not enough that they are Jove, Mars, Orion, and the North Star, in the gravitating firmament; they would have such poets as Newton, Herschell, and Laplace, that they may re-exist in the finer world of rational souls, and fill that realm with their fame. These beautiful basilisks set their brute, glorious eyes, on the eye of every child, and, if they can, cause their natures to pass through his wondering eyes into him, and so all things are mixed." And so through the wondering eyes of every man, all external objects seek to pass. The aspect of nature operates insensibly upon the soul of every rational creature in proportion to his natural susceptibility, and the images reflected there, whilst modified by the original disposition and current of his being, become invigorated by his intellectual power, and enriched by the stream of education. Impressions and influences operate also from other sources, until his mind becomes

> "A mansion for all lovely forms,
> His memory, a dwelling place
> For all sweet sounds and harmonies."

A feeling, more or less, of the beautiful in nature, is common to all, but only the artist, who, from superior intellectual power, and greater strength of imagination, has a fresher, deeper insight into the inexaustible life around, possesses the capacity to form his ideal, and give it expression. All have the æsthetic feeling, which means sensitiveness, or susceptibility of the impress or influence of the beautiful and poetic, but few have the creative power which belongs to the artist, viz., the faculty for reproducing and embodying the feeling in some form of art,—a picture, a statue, a building, or a poem. This is what is properly termed genius, than which there is perhaps nothing more difficult to define. It has been said to consist of a refined love of nature, "a love of the flower and perfection of things, and a desire to draw a new picture, or copy of the same." Sir Joshua Reynolds must be considered incorrect when he speaks of the imagination as being a lower faculty than reason; for the creative faculty is certainly beyond those which merely perceive and compare. It is the chief part of genius, —genius, to which all creation administers. To its sleepless eye lies open all the human heart, and all the stores of nature. A frequenter of the highways and thoroughfares of life, the man of genius, whether poet, or painter, or architect, is a watcher of events, "the votary of circumstance:" alive to every influence of nature, awake to the varied and complicated truths of existence, he lives with more than life about him; and the difference between the mind of the artist or poet and ordinary minds is this,—to the latter, the model, theme, subject, or whatever else the groundwork may be called, on which the material expressions of genius are founded, appears or sounds in simple unconnectedness, unsuggested, and unsuggesting, and exciting no further sensations than are contained within its known limits; but to the true artist it is the type of a past revelation, or the symbol of something intuitively foreseen. It is a point in an infinite series, coming down from the past, and leading off to the future in interminable perspective. And thus he to whom is given "the vision and the faculty divine," sees or hears in his subject that which, till he has materially realised it, is to other men invisible,—inaudible. The truest, subtlest alchymy is his who, from seeming dross, works the true metal of undying thought.

Genius, however, is not always a producer: there are those who are recipients of the tide of inspiration from nature, and yet yield no fruit to the storehouse of Art. They form and nurture their ideal but for their own solace and delight. Dissatisfied with human power of execution, and free, perchance, from "that last infirmity of noble minds," they build only in the region of dream-land, and shrink from all material realization of their works, lest they should betray the grandeur of their subject. They are what a French writer calls "the virgins of the mind," who "die without leaving any trace of themselves behind them upon the earth."

The beauty existing in the mind is higher in degree than that in either of the other realms of the beautiful:— It may be considered as superior to nature, as no individual, however beautiful was its archetype; and it is superior to that in Art, as no power of execution can do justice to the conceptions of genius. It is superior both to its antetype and to the image through which it is expressed: the eye never saw it in nature, nor, as I shall by and by endeavour to show, has the hand embodied it in Art. It is neither copied from a beautiful individual, nor compounded of the faultless features of a species, "create of every creature's best." No beauty was ever so formed, either in the mind or in Art. The mind operated upon and inspired by the general beauty of nature has become pregnant with a new beauty, greater than all. By what steps the process was conducted we can no more explain than we can the production of some vivid dream of the night from dull waking thoughts and incidents. The ideal of landscape Art is also in advance of nature; every plant, flower, and herb has its Venus or Apollo of ideal beauty: nature's general beauty has inspired and suggested a beauty beyond the individual, and ideas may be formed, and have been formed, of various inanimate objects, which perhaps no individual ever has reached, or ever will.

One object, perhaps, kindled it at first, but by constant study and observation—by catching nature in her highest moments—in her happiest moods—and fixing on marble or canvas the most fleeting beauties, it was corrected and improved. An artist once told me, that after he has placed the living model in the finest position he could think of for exhibiting the beauty and grace of the figure, by an accidental movement, he (the model) has himself immediately gone into one infinitely finer, and which he (the artist) could never have imagined nor dreamt of. This he has no sooner fixed on his canvas, than a slight and partial movement of some limb has developed a new beauty. Grace is beauty in motion, and the motion of animals, as well as of man, is constantly revealing new beauties to the eye of the delighted artist.

Thus is the ideal generated, notwithstanding the fact that natural beauty of form is dependant on fixed and determinate scientific principles, which are alike applicable to all the arts of design, and which it is the duty of the artist to investigate and study. It is a fact that, by the application of certain rules of proportion, beauty of form is produced in each art, and that the beauty of the face and figure of the Apollo is governed by precisely the same principles that reign in the temples of the Acropolis. This is a truth, however, that does not, what some writers have supposed, set aside the theory of the ideal. It is but a dead beauty that can be produced by rule. Expression is its soul and life, and this cannot be given by rule. We may point out the more prominent effect of the various passions upon the human countenance; but to communicate to marble the light, the glow, the shade of thought, the reflection of the soul on the human face, is the work of genius. The province not of rule, but of intuitive feeling. It is as true in art as it is in religion, that the letter killeth, the spirit giveth life.* S. H.

* To be continued

CHOICE OF STYLES.

WHEN an architect has to design a building now, he is beset by a difficulty which was never known in old times, but is now hardly less perplexing than it was ten years ago. The difficulty, I mean, is in deciding what style his building shall be of: and the varieties presented to his mind are neither few nor simple, including all the minor changes and even the mistakes and abortions of all times, none of which seem to be entirely condemned. With regard to churches, happily, the difficulty is almost overcome; but not at all with regard to other buildings, as the walls of any architectural exhibition bear plain witness.

The question never can be settled until the principles of each kind of architecture be well known and distinguished,—not those accidental peculiarities which every one observes, but some fundamental principles which give the character to the architecture. When these are once perceived, then we shall be able to decide which is the fit kind for us Englishmen of the nineteenth century: and the architect will have nothing to do then but to study the requirements of the building he is to design, and adapt the form of arrangement and expression to them. For it seems to me a great mistake to suppose that in the same country one style is most suitable for one sort of building, and another for another; for that which is not suitable to every sort of architectural building does not deserve the name of architecture; though I readily grant that an unlearned observer may hardly perceive that the same style is used in two buildings of a very opposite use, such as a church and a prison for instance.

I will, therefore, offer a few remarks which may tend to throw some light on the character of the different styles. Let us confine our thoughts to European architecture.

The various styles used in Europe since the beginning of civilization to this time may be divided rather roughly into three.

1. The true classical architecture which prevailed among the Greeks and Romans down to the fall of the Roman empire.

2. Mediæval architecture, which rose slowly out of its ruins, and declined and fell about the sixteenth century.

3. The revived classical, which is still prevalent.

Let us consider each of these styles:—

1st. As to the *general form* of their building.

2ndly. As to their *mode of expression*; for these two heads seem to me to comprehend the philosophy, so to speak, of architecture.

I would compare the general form of Grecian buildings to a planted grove of trees. They were even and regular, and presented the appearance of a wall, surrounded by rows of pillars, like the outermost stems of the trees while the low flat roof (sometimes there was none) was like the even top of the grove.

In the warm, sunny climate of Greece, men lived for the most part out of doors, and sat, for the whole day together, under the porticoes: it was, therefore, the outside on which most beauty was lavished, and the bright light and absence of mist and fog showed distinctly each little ornament of the capitals. The inside was to be as dark as possible, that it might seem and be more cool, and opposite to the external brightness and heat. There were, therefore, no windows, the only light being admitted by the door or the apertures in the roof. The roof was low, with just sufficient slope to let off the rain; there being no snow to rest heavily on it.

The cities of Greece had often abrupt table rocks, issuing isolatedly out of the level ground: these were always chosen for the temples and public buildings, and so the natural rock formed, as it were, the lower part of the building, to which the others were but upper stories or roofs. Thus, their form harmonized with the character of the ground.

With regard to the mode of expression in classical buildings, we can speak more definitely. Their effect was produced by actual sunlight. Beautiful forms were placed round their buildings. Pillars of the most perfect shape and proportion, crowned with capitals of delicately-carved acanthus leaves, supported an entablature in which line followed line and ornament ornament in undeviating regularity above all was a pediment filled with the most beautiful sculpture of some historical or mythological subject which was well known to the

spectators, and sure to call up heroic or patriotic feelings in their minds. But it was the clear sky and warm bright sunshine which gave to everything its life, the pillars, the horizontal lines of the mouldings, which were now broad lines of shade, and the godlike forms in the pediment. Where the atmosphere is thick and hazy, the light dull, the sunshine uncertain and comparatively wanting in brightness, and moreover far from vertical, the life of such a building is proportionally gone.

Any one may convince himself of the truth of this even in London, by noticing the much-admired portico of St. Martin's-in-the-Fields church. On a bright day, when the sunshine rests on these pillars, they seem to stand out alive and very beautiful, but how different is the effect on a dull cloudy day: then their beauty is entirely lost. How much greater, then, is the difference in the lovely climate of Greece or Italy, where not only is the light on the pillars far brighter, but also the shade behind far deeper from the vertical position of the sun. The Roman buildings were, many of them, indeed, merely for strength and use, and therefore these remarks cannot so well apply to them; but all those which were meant to be beautiful, temples and other buildings, depended on just the same means of expression as the Greek buildings,—external ornament, beautiful forms of pillars or pilasters, and capitals and entablatures placed outside. Thus the principle of beauty was the same in each.

But the introduction of the arch in Roman buildings caused a very important change. The arch, in all ornamental buildings, was merely used between the pillars, these being still the main objects; but in building for use only, the pillar was quite a secondary part, and sometimes quite disappeared. This led the way for the Romanesque style, which, although in the shape of the smaller parts it was classical, yet in the general form of the whole, and what is more important, in the expression, was different, and therefore I should call it the commencement of Mediæval Architecture.

2. The principles of mediæval architecture have perhaps been sufficiently acknowledged, but yet I will venture to state them as they seem to me: first, in form; then in mode of expression.

The general form of mediæval buildings certainly is aspiring—pointing upwards. The doctrine of the symbolism of churches has been so continually and disagreeably obtruded of late, as to have become a weary matter: it has been carried to such a height, that a Gothic church was considered a mere fable or allegory, of which the doctrines and practices of a certain religious school were the moral or application. Whereas, in regard to all the main parts and features of the building, they assumed their form from the necessity of the case, and the symbolical meaning was affixed to them afterwards, and only in the minor and accessory parts did this meaning grow up with the forms.

Let us, then, see how this aspiring form, which is the main distinction of Gothic from other architecture, came.

As Christianity spread northward through Lombardy, France, and Germany, and large churches were built, it was found that the flat roofs of Italy and Greece were not suitable to the climate; for though the smallest slope possible was enough to let the rain off, it was different when there came heavy falls of snow to rest on the flat roof—the weight would have seriously injured it; it was therefore necessary to give the roof a steeper slope, in order to let the snow slip off more easily. It was soon perceived that this did not in the least detract from the beauty of the building, but rather that the view of the roof sloping upwards over the side walls was in itself pleasing and beautiful. Soon greater height was wanted, and the requirements of the buildings demanded other arrangements, and thus, by separating the roof of the aisle from that of the nave, and adding chapels, transepts, and buttresses, that spreading tapering form was given to the buildings, which combined strength with lightness, and use with beauty. So the square form and horizontal lines, which accorded well enough with the character of the scenery and vertical sun of the south, and with that feeling of rest which a warm climate and cloudless sky inspire, were changed for the aspiring form and broken outline and vertical lines which suited the hilly country, the sky full of windy clouds, and the busy active spirit which the changing weather produces.

I think most persons must have noticed how much more lively and striking the spires and pointed roofs of our early Gothic churches seem on a windy day, when the clouds are driving along in rugged masses, or curling upwards, and the sun comes out only in fitful gleams; while a Grecian building looks uncomfortable, except when the sun is bright and the sky cloudless, or only varied by a few white motionless clouds; and the former is the kind of weather (in different degrees) more common here. So much, then, for the peculiar and distinctive *form* of mediæval architecture, a form that may be traced in various modifications, from the Romanesque churches of Pavia and Milan, to that model of beauty and majesty the choir of Cologne Cathedral.

Let us turn now to the mode of expression: the classical way was, we have seen, by external ornaments and forms of beauty, but this was unsuited to a more northern climate, and the habits of the people; for the climate being more damp and cloudy, the pillars, capitals, and sculpture would not only be sooner injured, but also less clearly seen, and their beauty lost; and the people lived more in-doors than out: all ornaments, therefore, were, for both reasons, transferred to the inside, except only in the porches, which were half protected, and also so close to the spectator as to show their sculpture perfectly. This change was made very quickly, even in the Romanesque styles. But, how was the expression gained for the outside? By means of the windows: out of them, so to speak, the soul of the building looked; and through them, too, the light burst, in beautiful forms, into the interior. It was thus through beautiful shapes painted by the darkness within, and not by the light without, that the effect was produced. Mediæval architecture was at its perfection when, for a short time only, these two expressions were combined—when external lines of beauty were put in the only place where, in our climate, they could be seen, in front of the holes—when, I mean, the lines of stone-work in the windows were beautiful, as well as the holes between them. This was the case in the Geometrical Decorated of the end of the thirteenth century, and also in the earliest specimens of the Flowing Decorated. From that time the style began to degenerate, for in both points, in form and expression, those classical principles which had been discarded because they were found unsuitable, were returned to. The form of buildings of the "Perpendicular" style became lower, the roofs less pointed, at last almost flat, and the expression was made to depend upon external ornament, at first, only in the windows, but afterwards in external sculpture, and panelling an inch or two deep, which was quite inefficient in depth of shade; and so at last our buildings were merely square tasteless shapes, incrusted with unmeaning pieces of carved stone. Henry the Seventh's chapel at Westminster is an example of this sort of building, in which, at an enormous expense, there is produced a great deal of ornament but very little beauty, while the general form is heavy in the extreme.

The way was thus prepared for a recurrence to classical forms, modified: it was easy to see that graceful pillars and capitals and groups of sculpture were more really beautiful than the panelling of the Perpendicular style: if, therefore, external ornament was that on which the beauty of the buildings was to depend, these were, of course, to be chosen. Thus was produced the revived classical or Italian style, to which we will devote a few remarks. With regard to the general form of this style I profess myself unable to seize upon any peculiar principle; it appears rather to be such as long custom to Gothic forms would suggest, and the arrangements of modern houses and churches require. One new feature, indeed, of great beauty was added, I mean the dome, which had, indeed, been used in the East long before, but was unknown in our parts of the world. Horizontal lines were now entirely predominant over the vertical, a change which we noticed as commencing in the latest Pointed style.

However, in the other point, the mode of expression, we are at no loss; it is a recurrence to classical architecture, the expression being entirely dependent on external ornament. But as an external row of pillars would only darken the windows, and where the height of the building was divided into floors or stories, would be incongruous, they were changed for smaller ornaments, except at the doors (even these absurdities, however, are to be seen in the modern caricatures of Greek temples which are ranged round Regent's and St. James's Parks). Thus, in buildings of this style, the shape of the windows is neglected, but the borders of them are ornamented with mouldings and cherub heads and flowers; niches and pilasters are inserted in the spaces between, and bundles of flowers and fruits carved in stone are, as it were, fastened on other parts. But the most beautiful of the works of sculpture, in which the spirit and genius of the artist is called forth most, are of course human figures or groups of sculpture, such as of old filled the pediments of temples: these accordingly find their place in the Italian buildings. St. Paul's cathedral has its west front adorned with several bas-reliefs illustrating the history of the apostle, and on the tops of the three pediments are colossal statues of the apostles and evangelists, and the other ornaments I have mentioned are to be found on the side walls. Is this an effectual way of producing beauty in England? Let us think. Persons must certainly be wanting in observation not to have noticed the large statues on the roof of St. Paul's, yet I have known many such; but perhaps nine persons out of every ten that daily pass by have not observed the bas-reliefs and festoons, and these, remember, are such ornaments as, if they are not actually noticed, add nothing to the general effect. A person may not have noticed the exact form of a window in Westminster Abbey, yet if the windows were now blocked up he would at once miss them (I mean externally): the building would look blind and lifeless; but take away the carvings of St. Paul's, and who would notice the loss? I think very few. And why is this? The ornaments themselves are, many at least of them, beautiful. The reason seems to be the same which made the true classical style unsuitable for northern Europe—want of light and sunshine. External ornament, especially of a shallow kind, is thrown away in our climate; no one can see it, except under very favourable circmstances, when the sun does happen to shine brightly upon it.

There is also another impediment which exists in our towns, and London especially, which seems perhaps a trifling one, yet is really very great; and that is, the accumulation of dust and smoke. The walls of St. Paul's are begrimed with soot, only washed off in lines and patches here and there by the showers. To expose beautiful sculpture there for view is almost as absurd as to hang a picture in a chimney.

This, then, is the mode of expression of the Italian style, and these are the difficulties which lie in its way among us.

I have thus endeavoured to go through some of the leading points of the various styles, under the heads of Form and Expression; and, imperfect as this sketch is, it may yet, perhaps, suggest some thoughts which those who have more experience in the science may improve. At any rate, it is by such considerations as these that the architect must decide for himself, when he designs a building, on what means he intends to depend for the effect of his building, and how far his means are capable of producing the beauty he seeks. Time, labour, and money are often wasted on elaborate and accurately-worked ornaments, which yet add nothing to the beauty of the building, and which the designer would never have employed, if he had rightly known the principle of their effect, and had seen why it would be inapplicable in his particular case. It is in the hope of preventing such a waste of labour and ornament, and of promoting an effective beauty in all kind of buildings, that these remarks are offered. F.

MERTHYR TYDVIL WORKHOUSE COMPETITION.—Twenty-seven designs for this building were lodged, and those bearing the motto "Si fortuna jubat," found to be sent in by Messrs. Aickin and Capes, were selected.

PATENT-LAW REFORM.

IN some past observations on the protection of new inventions from piracy, we took occasion to remark that the patent laws are virtually and really smothering in their birth the hopeless fruits of the poor man's ingenuity, and *suppressing ultimately that very invention which a patent law, worthy of common sense, should cherish and extend.* We are glad to perceive that the committee of members of the Society of Arts, to which we lately referred, direct particular attention to this very view of the operation of the present patent laws, the first and main point on which they "wish particularly to obtain information" being "the effect which the existing system of patents may have had *in suppressing and thus depriving the public of the knowledge and use of inventions*, by those who are unable to bear the heavy expenses required under it." The committee, meantime, are about to consider the principles of jurisprudence which should regulate the recognition of the rights of inventors. A report on this subject will be referred by the council of the society to the committee, who, as already announced, have agreed to act in the promotion of "a legislative recognition of the rights of inventors by means of an easy registration of them in accordance with the principles agreed on by the council of the society in 1849." The report alluded to is not yet fully prepared, but we have reason to believe that it will go thoroughly into the subject, and advise a total overturn of the principles (if they can be called so) on which the present system is based. The *right* of the inventor to hold the fruits of his intellect and labour as his own property, subject, like all other property, to certain duties and conditions for the public good, will be insisted on, and ranked with the rights and duties of property in general, although not recommended to be given or held, like right to land, &c., in perpetuity. It is considered as an utter anomaly in law and equity that proprietors of inventions should be obliged to actually *beg* to be allowed to hold their own inventions to be their own property, and graciously to have granted them what, after all, is little more than a mere empty form of protection from plunder. In its preamble, the report will probably examine into the causes of the present unsatisfactory position of inventors, and the state of the present system of "jurisprudence" in invention; after which it will attempt to determine those principles which ought to regulate that jurisprudence. From the present state of things, it will endeavour to evolve what may be useful for future legislation. Justice will be done to the Registration Act as an irregular improvement in, or rather substitute for, the law as it stands,—as "a small patent law" in short, as the public have not been slow in making it. Indeed, the principle to be recommended is simply an evolution of the Registration Act itself,—"an easy means of registering" the claims of inventors in general, which the law shall regard as valid until they are proved to be otherwise, as is the case already in almost every civilized country but our own. The establishment of any tribunal to investigate claims either before they are disputed or afterwards, is a separate and distinct question quite independent of the policy of recognizing the rights of inventors to the fruits of their labour. The report, however, will probably discuss that question also, arguing, so far as regards litigation, that as the thousands of registrations effected under the "Utility" Designs Act have not encouraged litigation, but have, on the contrary, generated a much-improved tone of morals amongst inventors, oppressed by the patent laws, who have taken refuge under this Act—often illegally, or under the pretence of registering mere "form or configuration," but almost uniformly with respect, to even such illegal claims of registration,—it is at least doubtful, and remains to be seen, whether an extension of the Registration Act to all inventions, as the proper and only patent law, will promote undue litigation. It will probably be shown that in the working of the Ornamental Designs Act there are thousands of simple calico patterns claimed and registered every year as legal rights, by payment of one shilling, under penalties of 5*l.* to 30*l.* for infringement, recoverable in the simplest way on summons before a magistrate, and yet, that there have not been an average of twenty convictions a year during the creation of at least 50,000 patterns.

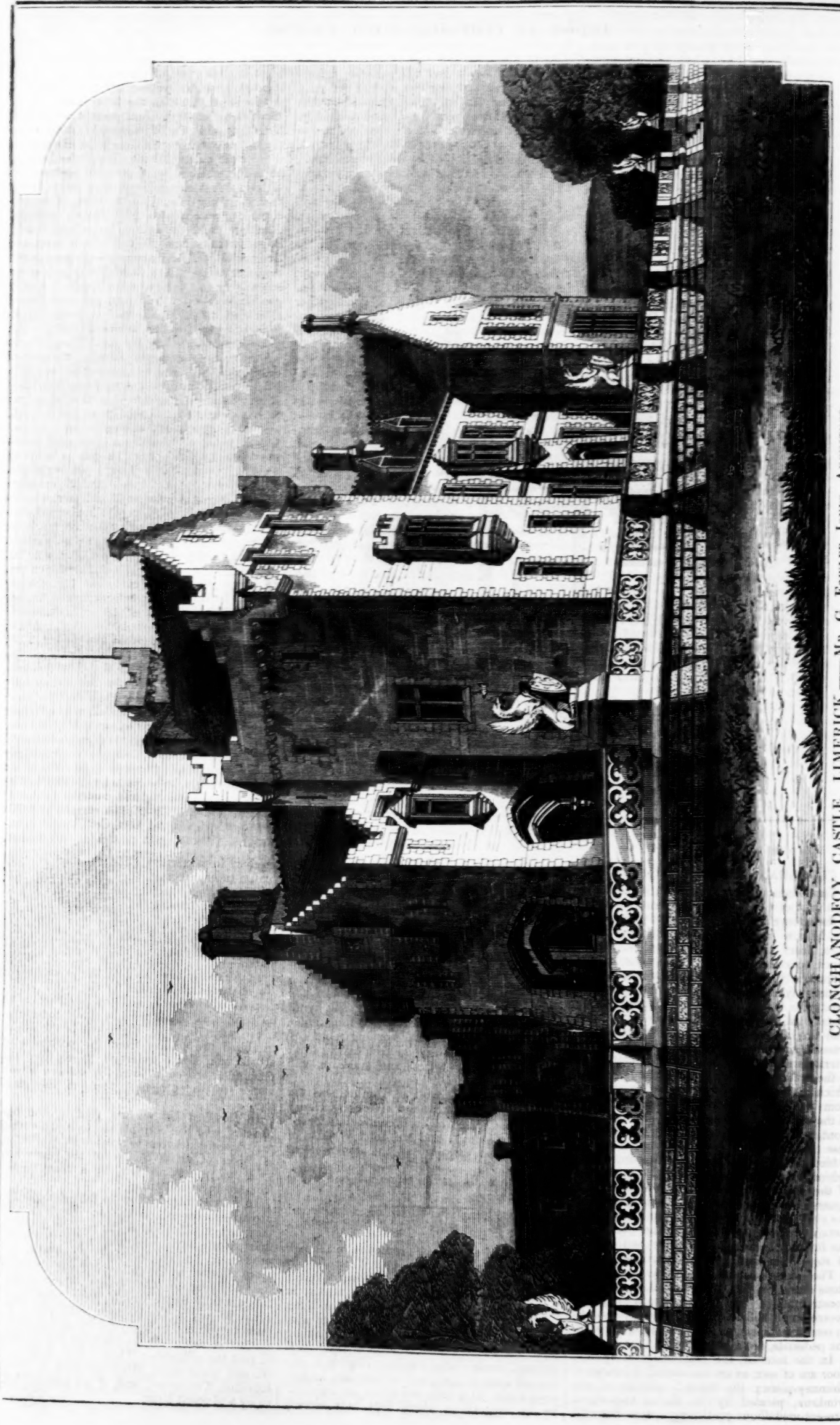
As to the time and cost of the proposed registrations, the report will probably recommend that each registration should be valid for one year and cost one pound; but that at the end of that year the inventor should be called upon to perfect his registration, and to deposit a copy of the article he has produced, or a sufficient model of it, where practicable, amending his first specification within reasonable limits, should he require or desire it. If his invention have proved useless, he will doubtless not complete a further registration, and his right will lapse. If he find it worth pursuing he will be glad to do so, and to pay a sufficient sum.—say 10*l.* for five years' right; 50*l.* for other five years' right; and, lastly, 200*l.* for a *final* extension of five years, when the right should altogether cease. The total cost of a patent of twenty-one years would thus be 361*l.* By this regulation it may be thought, an unerring test would be afforded of the value which the public and the inventor set on an invention; the inventor, on the one hand, becoming a perfectly truthful index of the use which the public make of his property, and the public, on the other, obtaining the speediest surrender of rights.

Many other points of importance will be considered in this report; and we are hopeful, although by many it is deemed too late, that a discussion of the whole question will not only be gone into, but produce some practical result in legislative enactment, in sufficient time to promote the interests of inventors in the Great Industrial Show of the year now close at hand.

NOTES IN THE PROVINCES.

A MEMORIAL window has just been completed in the church of Great Waltham to the late Mrs. Tuffnell, of Langleys. It is placed on the south side of the nave, and is composed of three lights cinque-foil headed, and the principal subjects are the Saviour in Glory, Virgin Mary, and Elizabeth. The work was done by Messrs. O'Connor. The cost, including repair of stonework, was 115*l.* This church contains another memorial window, erected in 1848 to the late Mr. Charles Dyer, architect.——On 7th inst. Waltham Church was reopened on its repair with increased accommodation. The nave has been lengthened, and open seats substituted for large square pews. The mouldings of arches and capitals, &c., have been restored, and several windows filled with stained glass. The exterior has also been repaired, the north wall of north aisle rebuilt, and the tower, &c., improved.——The Maidstone council have been called on by nearly 500 of the resident householders to erect public baths and washhouses in that town.——A new company is to apply to Parliament for an Act to build a pier, to be called "the Strand Pier, Quay, and Esplanade," to be erected near Ryde Castle, at the east of Ryde.——The chancel of Kingsthorpe Church, which was much decayed, has recently been, in great part, taken down and rebuilt, the roof raised, and an east window, designed by Mr. W. J. Donthorn, architect, inserted at the expense of the present incumbent.——A Hereford paper congratulates the citizens of Hereford on the improvements already effected, and also on the very extensive ones contemplated, with respect to their cathedral and its immediate vicinity, more especially in the cathedral-close itself. The unsightly paling or boarded barrier which has so long surrounded the structure is also now in course of removal; and it is said to be the intention of the Dean to summon to his aid a landscape gardener, for the purpose of putting the Cathedral-close in a proper state.——An important event has just taken place at Holyhead, in the final breaking-up and closing of her Majesty's dockyard establishment. This measure was carried out a few days ago, when all the mechanics and labourers hitherto engaged in the various departments of the dockyard were discharged.——Our paragraph as to Aberdare, a fortnight ago, said the proposed new church was begun. It is not, however, to be commenced till the spring. It is to accommodate 750 adults:—500 of the sittings are to be free. The site has been given by Lady Bute, with a handsome subscription in addition. The population of Aberdare is now between 13,000 and 14,000; present church accommodation 176; not one sitting free. Schools have been lately built at the hamlet of Cwm Bach, and at the town of Aberdare, to instruct 300 children in the former, and 400 in the latter, and in each of which divine service is at present performed. Mr. Clive, M.P. for Worcester, has determined to erect a church on his estate, at Heolyfelin, to meet the spiritual destitution of the locality adjoining, which schools are to be built immediately. A vicarage-house has been lately erected by the Rev. John Griffith, M.A., incumbent, which, with St. Elvan's church, Aberdare, and the schools at Cwm Bach, Aberdare town, and Heolyfelin, are from the designs of Mr. A. Moseley.——During a recent discussion in the Sheffield Council as to supporting a design entertained by the guardians to erect their own gas works, and thus save, as estimated, no less than 100*l.* a-year, at an outlay for works of 430*l.*, Mr. Groves, as reported by the local *Times*, "read a number of statements showing the cost of manufacturing gas at a number of private establishments. It appeared that at the West Riding house of correction at Wakefield, gas was made at a cost of 12½d. per 1,000 in 1849, and at 9½d. per 1,000 in the former half of 1850. He mentioned three private establishments in Sheffield at which gas is made at 1s. 6d. per 1,000, including all expenses, 3s. 4d. per 1,000, and less than half the price paid to any gas company.' Messrs. George Wright and Co. of Liverpool, informed him that the cannel coal used by the Liverpool Gas Company costs on an average 12s. per ton. The price charged for gas is 4s. 6d. per 1,000, coke selling with difficulty at 6s. 8d. per ton. In Birmingham, where coal costs 11s. 6d. per ton, the price is about to be charged 4s. per 1,000, with a discount of 10 per cent. where the consumption exceeds 100,000 feet. At the Sheffield workhouse, from September 30th, 1849, to June 30th, 1850, 796,000 feet of gas was consumed; the cost for the first three quarters being 5s. per 1,000, and for the last quarter 4s. 7d.; total amount paid, 196*l.* 19s. 10d."——Messrs. Losh, Wilson, and Bell, of the Walker Ironworks, at Newcastle, according to the *Journal of Gas Lighting*, have been contracted with by the New River Company for the supply of 1,500 tons of cast-iron pipes, thirty-six inches diameter, to be made on Stewart's principle. This house had the contract for some pipes of the same description recently supplied to the Great Central Gas Consumers' Company.—— The ancient church of All Saints, Cockermouth, we regret to say, was destroyed by fire on Friday morning in last week. Scarcely anything but the walls and tower remain standing. The paintings in the church were destroyed. This church was enlarged and beautified in 1825, when 322 additional sittings were obtained, half of which were free and unappropriated, so that it could accommodate about 1,000 persons. The tower contains a peal of six bells, a clock, and chimes. The church was built on the site of the original chapel, which had a chantry, endowed in 1399 by Henry Percy, Earl of Northumberland. It is at present supposed that the fire was caused by some pipes which have just been laid in the chancel to warm it through the winter.

ENLARGEMENT OF SMITHFIELD.—Application is to be made to Parliament in the ensuing session for an Act for enlarging the site of Smithfield market, and improving the approaches thereto; and for these purposes to take the land and buildings between Snow-hill on the south, King-street and West Smithfield on the south-east, Smithfield-bars on the east, Cowcross-street on the north, Turnmill-street on the east, Castle-street on the north, and Victoria-street on the west. It is also intended to take power to erect a dead meat market and slaughter-houses, and other buildings connected therewith, and to provide the same with all necessary conveniences, and to alter acts relating to market days, tolls, stallages, &c.——We may here also state that a similar application is to be made by the Islington Cattle-market Company for an enlargement of that market, an incorporation of the company, and other purposes.



CLONGHANODFOY CASTLE, LIMERICK.—Mr. G. Fowler Jones, Architect.

LODGE AT CLONGHANODFOY CASTLE.

CLONGHANODFOY, CO. LIMERICK.

The accompanying illustration is the north-west view of Clonghanodfoy (from Clanodvie), in the county of Limerick, recently erected by the Misses Gascoigne, of Parlington, Yorkshire, from the designs of Mr. G. Fowler Jones, architect, York. The style mainly adopted is the Old Scotch Castle or Manor House style of Scotland, which prevailed during the Stuart period: it comprises occasionally the Jacobian, and features in common with the Elizabethan; these, however, in the present instance, are chiefly confined to the interior and the terrace. On the ground floor, in the principal tower, is the library; behind which is the hall, a large apartment entering from the *Porte Cochère*; beyond the tower, in the curtain building forming the principal front, is the morning-room, with grand staircase behind, and anti-room beyond; the gabled return shows the end of drawing-room, behind which is the dining-room. In the rear of the *Porte Cochère* is seen one side of a square of domestic and stable offices, open on the side parallel with the principal front. The terraces enclose three sides of the buildings; the further contains the fountain, with flights of steps from the ornamental gardens.

The stone used is the old red sandstone found on the property. The roofs are constructed of cast and wrought iron, and covered with Killaloe slating. The open-work in terrace parapets, as well as the griffins on the pedestals, are cast in Portland cement.

In the interior, the hall wainscotting and floor are of oak, as are the carved dressings of chimney-piece; the stained glazing of the windows, painted by the Misses Gascoigne, present medallions containing scenes from the life of St. Patrick. The staircase, also fitted up with oak, contains, in the stained glass work of the window, the armorial bearings of the family, also painted by the lady proprietors, whose artistic skill was further exercised in painting Arabesque panels for the door and window shutters of the drawing-room, and upon glass panels for insertion in the marble chimney-piece of the same room.

The following are the dimensions of the principal rooms:—Dining-room, 35 feet by 23 feet; drawing-room, 35 feet by 23 feet; anteroom, 24 feet by 19 feet; morning-room, 24 feet by 19 feet; library, 24 feet by 24 feet; hall, 27½ feet by 25 feet; and staircase, 22½ feet by 21 feet.

Mr. Thos. H. Carroll, of Dublin, was the contractor for the stone-work; Messrs. Henry and Thos. Creaser, of York, contractors for the interior finishings; and Mr. John Walker, of York, founder, supplied all the iron-work of roof, &c.

The other illustration represents one of the principal lodges.

EXHIBITION OF DRAWINGS AND SKETCHES, PALL-MALL EAST.

The chief objects the promoters of the new exhibition, opened at the Old Water Colour gallery, had in view were, to bring together some of the best works of modern artists, in the shape of drawings and sketches, so hung that they might be fairly seen; and to give artists another annual opportunity of coming into immediate communication with purchasers. Seeing what has been done in a very limited space of time, and without any lengthened notice to artists, and aided as they will be by suggestions which they have already received from various quarters, there is every reason to expect that they will be able next year to bring together such a collection of sketches and drawings as will demand the attention of every lover of modern British Art. Indeed, this is the least that can be said of the present exhibition. It consists of 326 excellent works—195 of which are for sale, or rather were, for many were sold at the private view. No charge is made either for the exhibition or disposal of any work, and the purchase is to be completed in all cases by direct communication with the artist. Eighty-six of the works exhibited are studies from the portfolios of artists who desire to retain them; and the remainder are contributed by owners whose names are placed against them in the catalogue.

In this last list we are glad to find her Majesty, who has been pleased to sanction this well-meant endeavour to provide an exhibition of works of art at a time of the year when such enjoyments are few, by a contribution from the royal collection.

In a brief introduction to the catalogue the promoters express, on the one hand, as well they may, gratification at the manner in which their efforts have been responded to by the profession; and on the other, regret that the space afforded by the gallery did not admit of their applying to other artists, whose works, they are fully aware, would have been quite equal to any in the present collection. To these they intend to apply for co-operation on another occasion. We recommend our readers to visit the collection. They will see how well oil and water-colour drawings may be hung together, if mounted, and, if we mistake not, enjoy a pleasant hour.

The following is a list of some of the pictures sold at the opening of the gallery:—22. "Study from Nature," by F. W. Topham; 40. "Beatrice," by A. Elmore, A.R.A.; 63. "Carting the Wheat," by S. Palmer; 71. "A Breton Interior, painted on the Spot," by E. A. Goodall; 76. "On Brighton Beach, study from Nature," by C. Davidson; 87. "Original Sketch for the Picture in the Royal Collection at Osborne, painted by command of H.R.H. Prince Albert, representing the Arrival of H.R.H. at Dover in February, 1840," by W. A. Knell; 99. "Near Bandon, South of Ireland," by Geo. Fripp; 121. "Highland Boy, with Dead Stag and Deerhounds," by Frederick Taylor; 129. "A Sketch, painted on the spot," by H. J. Boddington; 135. "The Last Load," by E. Duncan; 155. "Make Hay while the Sun Shines," by C. Davidson; 156. "Cupid and Psyche, from the fable of Apuleius (the original sketch for a picture painted for H.R.H. Prince Albert)," by Thomas Uwins, R.A.; 161. "1. Morning Prayer—2. Visiting the Sick: Peace be to all in this House—3. The Child's First Prayer,"—by R. Redgrave, A.R.A.; 170. "The Impending Mate" and "Mated," being the original sketches for the larger pictures, by F. Stone; 175. "Interior of an English Cottage," by E. A. Goodall; 194. "A Sketch from Nature, painted on the spot," by H. J. Boddington; 198. "The Secret Progress of the Reformation, sketch for a picture," by James Godwin; 210. "Superstition: the Imposition of Relics and Indulgences," by the same; 246. "Study of a Female Head," by H. Le Jeune; 246. "The Intercepted Letter," by G. Cattermole; 263. "Presentiment of Ill," by G. Cattermole; 297. "Sportsman and Dogs," by R. Ansdell; &c.

Anthony, Lake Price, John Martin, E. M. Ward, W. Bennett, Hook, Egg, E. Duncan, Frith, Tenniel, Holland, Frost, F. Goodall, Webster, Turner, and Solomon, are amongst the exhibitors of the most noticeable works.

HOW FASHIONS CHANGE IN ARCHITECTURE.

In the course of a paper read by the Rev. B. E. Bridges, "On some of the Distinctive Features of Christian, as contrasted with Classical Art," at the recent annual meeting of the Bedfordshire Archæological Society, the reader connected the use of the *dome* in architecture with degeneracy, both doctrinal and practical, and thus proceeded:—Let us look, then, to ourselves. Far other shows our own Metropolitan Church of Canterbury: far different its structure, and far more appropriate: no stately dome rises from its centre, but a tower is seen instead—the topmost stone in each of whose tapering pinnacles consummates the beauty of devotional effect which prevails throughout. And such the structure, such the character, generally, of all our other cathedrals — with one single exception—that, indeed, both large and signal—in the metropolis itself. There, in professed, though humble, imitation of its Romish prototype, a kindred dome lifts up itself on high;—reared, however, during a degenerate period of our Church's history, from which it is to be hoped we have now at length emerged,—reared on a foreign model, and exhibiting, externally, on a reduced scale of pompous grandeur, the swelling proportions, but without aught of the internal richness and splendour,—the gorgeous gildings and rich mosaics—of the original—combining thus the evils of a semi-classical and inappropriate style with a coldness and a poverty all its own. The very inscription which runs round its central dome, in recording the name of its unquestionably great architect, condemns the greatest of his works, which it professes to extol, or at least indicates with sufficient clearness the purpose to which it would have been more properly made subservient: "*Si monumentum quæris, circumspice*"—in humbling contrast, it must be allowed, with the corresponding circumscription in the church of the illustrious fisherman, emblazoning, as it does, those words of high approval and large commission, which, however unhappily since misunderstood and misapplied, were yet the words of Christ himself addressed to his first apostle, and express the awful powers vested in, together with the lofty destiny reserved for, that spiritual yet visible society of which he who spake them was to be the one invisible head, but he to whom they were spoken, nevertheless, one main human pillar. No: repudiate we the swelling dome of Italy—for our churches at least—together with those erroneous doctrines and corrupt practices, which in many respects it not unaptly typifies: that dome of swelling pomp, when it surmounts a Christian church, seems to belie the original high disclaimer, "My kingdom is not of this world"—it ill accords with the unearthly character of the Christian system, in a *political* point of view, still less with the devotional spirit, which is its distinguishing *moral* feature, and which is most adequately represented and palpably embodied in the solemn pointed arch and heaven-seeking spire of Gothic architecture.

METROPOLITAN WATER SUPPLY.

The Central Board of Health having employed the Hon. William Napier to visit the gathering ground of their proposed rain-water supply, and make a careful re-examination of its sources, has reported to the Board, recommending that instead of carrying out their scheme as previously proposed, numerous springs lying around and within a bird's-eye view of Farnham-hill, be collected at their sources, through tile, brick, and pipe conveye, to mains, and conducted by Wimbledon Common to the whole metropolis, and which might thus, he calculates, be supplied without intermission to the highest requisite level, and without any cumbrous system of storage, reservoirs, or any breadth of area whatever being required, but simply an underground right of way, running great part concurrently with railway lines already laid.

The results of Mr. Napier's experience with respect to the quantity and quality of water to be derived from these gathering-grounds, are thus stated:—

"The report gives 28,000,000 of and under three degrees of hardness. My results give 40,000,000 of and under one degree, and 10,000,000 of and under two degrees of hardness. This improved quality is gained by my development of the principle of taking the water from its source, (that is, where it issues from pure sands), and leading it away before it can be affected by contact with soils. I beg to express my conviction that the purity will depend entirely on the careful execution of the work: it would give, to recapitulate its qualities, 40,000,000 of water, of primitive purity, perfect as to aeration, of a grateful temperature, about 50 degrees, brilliant in colour, soft almost as distilled water, and almost free from all mineral, and vegetable impregnation, sufficing the supply, at the estimate of 75 gallons per house, of 523,126 houses."

ELONGATION OF PALL MALL, AND SOME LONDON IMPROVEMENTS.

Having at various times suggested many public improvements in the parks, piazzas, and causeways of the metropolis, perhaps you will further allow me to recall the recollection of a plan already published by The Builder, to improve the noblest range of buildings in London, as put forward by me,—one which would let daylight in upon the majestic Strada, Pall Mall, and at the same time give to the inhabitants of the great city a direct approach to Hyde-park *without a hill*;—a plan which could be accomplished by the purchase and demolition of only eight houses, viz., one at the corner of St. James's-street, six in Cleveland-row, and one (Lord Sydney's) facing the Green-park; and above all, a plan that would not require any expense beyond the formation of about a quarter of a mile of road (and for this the rubbish of the prostrated walls would yield material) from St. James's Palace, in the line of Pall Mall, direct to Constitution-hill.

This line would strike out (as before indicated) at about 200 yards southward of the duke's colossal statue, and, terminating at the *chevaux de frize* of Buckingham-gardens, would give a sylvan termination at one end of a boulevard, the other end of which would originate from the tympanum of the National Gallery.

The whole expense of this suggested improvement could not exceed, say 80,000*l*. The line of palaces from the Gallery, by the Opera House, the United Service, the Athenæum, Reform, old St. James's, and Lord Ellesmere's, would be an avenue worthy of London.

This route, I said, should terminate at the wall of Buckingham Palace-garden—would it did not! If the line were drawn on to Belgrave-square, what an illustrious range it would present! The utility, the beauty, the nobility of such a thoroughfare cannot be overestimated.

Perhaps an extent of *four acres* (certainly not exceeding five) might be excised from the royal gardens; but this is an acute angle—a mere strip between a row of houses (Grosvenor-place) and a wall, both of which must cast a double gloom on the walks that nestle under them. It is not likely to be (just at this far end) of much avail to the royal family; but if it were, there is a scope of space full under the palace walls (the road in Pimlico) which would make a fair equivalent, or, if necessary, an equal section of the public grounds nearer the palace.

The convenience of vicinal plots gives to them always an enhanced value: an outlying portion is well exchanged for another, equal in extent, that might form a *ring-fence*, and Horace's "*Angulus iste*" was to the loving proprietor what it continues to be in our unpoetic days. To the public such an exchange would be of inestimable value, and for the royal family such a dignified seclusion not less to be desired. Your professional architects, who are capable of projecting beautiful designs, are not always the best judges of what may be most useful, most expedient, and most economic. He who, unfettered by the trammels of professional conventionalism, takes an unbiassed glance at ancient (mayhap consecrated) boundaries and limitations, may strike out a utilitarian embellishment with more justice, truth, and even good taste. The stonehewer sees no farther into the millstone than the passenger who sees him strike. Whilst the one profits by his calling, the other can trace with equal precision the line of the chisel. So, Sir, having seen others hammering at works of an operose description, I put in my spoke, in the hope that it is not too late for him who began first as *ille ego qui*

Quondam.

*** If we are rightly informed, the late administration of the Woods and Forests had resolved to make this opening to the Green-park as soon as certain leases fell in, which would be in 1861. Why should we wait so long?

MODERN STATUARY.

At the present time the public mind is much engaged with the subject of erecting testimonials to the memory of our late great statesman, Sir Robert Peel: will you, therefore, allow a few remarks upon statues, and their general position in this country? Perhaps in no nation are they better executed or worse placed; witness most of those in our great metropolis—either altogether out of sight, except at an immense distance, as the York and Nelson monuments—placed so, that if an animal be introduced its head takes the place of its rider's, as the Wellington Statue at the Royal Exchange; or if neither of the beforementioned absurdities are perpetrated, the whole mass is placed on the key-stone of some arch, as at Hyde-park-corner. Now, Sir, if we wish to see statues placed in their proper position, we must look to the land of sculpture's birth—Greece or Italy: there, though in many cases they are raised much above the level of the eye, yet a due regard is always observable to their attitude and disposition, and in no case, that I am aware of, are they placed so completely beyond the ken of mortal eye that their finer parts are lost in the distance from whence they are best seen. Again, the climate of England and its atmosphere, loaded with carboniferous impurities, so very essentially differs from that of classic ground, that what is suitable to the one is most inapplicable to the other. I need not mention the Marble Arch at Buckingham Palace as an example. Our ancestors to the fifteenth century were well aware of these facts, and therefore placed their effigies under cover of cathedrals, walls, &c.; or if they did erect them as independent monuments, the statue and its covering formed one and the same composition, and this not only for ecclesiastics, but others also—witness Queen Eleanor's Crosses. Nay, so convinced were

they of the necessity of cover for their statues, that if placed against a building, canopied niches were made to receive them. As to material, bronze is most certainly the best that can be obtained, but, independent of its great cost, it soon loses the beauty of its fine arrises by the great accumulation of dirt which prevents their being seen; and, besides, I have a strong idea that in many towns where large chemical works are carried on, a great decomposition of its finer parts would sooner or later take place. White statuary marble is, for reasons before stated, most unsuitable for exposure to the weather, but have we not in our country materials equally good and much better suited to the purpose? Who will say that if a statue must be denuded of shelter Anglesey marble would not meet every requirement, or if placed under cover there are plenty of quarries in Yorkshire and Derbyshire giving a first-rate stone—fine in its component particles, but solid in its texture, and taking a good weather face? I will not trespass longer on your time in saying how that, in the so-called dark ages, beauty of design and veneration for the departed were most admirably blended with utility to the living; how one memorial had a reservoir of spring water attached, another served as a market-cross, while a third, with the statue of its founder in the court-yard, still shelters the poor and afflicted.

C. W. ORFORD.

CONSTRUCTION OF ENGINE CHIMNEYS.

A CORRESPONDENT who forwarded us a design for an engine chimney 150 ft. in height from the ground, with a pedestal 9 ft. 6 in. square, and a diameter for the shaft of 8 ft. at bottom and 5 ft. at top, the internal diameter of the flue 3 ft. 6 in. all the way up, is surprised at our refusal to engrave it, because he thinks it would tend "to elicit different opinions." It could only elicit one opinion as regards itself, namely, that the diameter is much too small for the height. The arrangements required by the official referees for metropolitan buildings, in respect of engine chimneys, will serve to show this without further comment. They require that the base of the footings should be one half longer than the base of the shaft, and be placed as low as the base of the footings of any adjoining wall or building. If the shaft be square, the height of it must not exceed *ten times the length of the side at the top of the footings; if circular, twelve times the lower diameter.* The shaft must diminish in size upwards, and be at least one-third less at the top than it is at the bottom. It must be bonded every six courses with hoop-iron, lapped at the edges. The projection at head of chimney, if any, must not exceed three-fourths of the thickness of the brickwork from which it projects.

THE VENTILATION OF MINES.

INSTITUTION OF CIVIL ENGINEERS.

ON the 10th inst. Mr. William Cubitt, President, in the chair, the subject of the paper read was, "The Ventilation of Collieries, theoretically and practically considered," by Mr. W. P. Struvé.

The author commenced by showing that the general principles which ought to govern the ventilation of collieries, were—

1st. That a current of air through the channels of collieries, at a velocity of five feet per second, was sufficient for most purposes.

2nd. That a current exceeding that velocity would only be attained at the expense of leakage and other evils.

3rd. That in order to obtain the requisite supply of fresh air, the channels of a colliery or mine ought to be enlarged, according to the exigency.

In the process of laying out a mine, a subdivision occurred by which the workings were apportioned into numerous compartments, which facilitated the system of splitting the current of air, or diverting it into numerous channels, giving to each compartment a separate and, therefore, more effective ventilating force: at the same time the area of the channel was enlarged, and the aggregate length of the air tube shortened, so that it was quite impracticable to pass through the workings of a mine, three hundred cubic feet of air per minute for each man employed.

The details of two experiments at the Eaglesbush and Ynis David Collieries, where the air was pumped out by Mr. Struvé's Mine Ventilator, showed that a large proportion of the air was drawn from the old workings and the "goaf," or broken ground surrounding the colliery, and did not come down the intake shaft, and traverse the actual workings, as it ought to have done.

In both these cases, the enlarging and splitting of the air channels, so as to reduce the velocity of the air to about three feet or four feet per second, would have produced most beneficial results.

These principles were shown to have been lost sight of in the majority even of the great collieries, and the power of rarefaction by a furnace was trusted to for dragging the long column of air over and through innumerable impediments.

The experiments of Mr. Nicholas Wood, Mr. G. Elliot, Mr. H. Vivian, and other mining engineers, were quoted, to demonstrate the insufficiency of the "steam jet," as a means of promoting ventilation, showing that it was a wasteful application of power, when compared with the steam force employed to work the lecturer's own Mine Ventilator at the Eaglesbush Colliery.

The discussion upon this paper was announced to take place on Tuesday, 26th, when Mr. Gurney will perhaps say a word in reply.

Miscellanea.

ON DIRECTING THE COURSE OF BALLOONS.—The writer of the article on the above subject in THE BUILDER of last week is probably not aware that what he suggests was proposed many years ago in France. On December 2, 1783, the Academy of Lyons offered a prize of 1,200 livres for the best dissertation on the following subject:—"To find the most certain and most simple method of directing the air balloon horizontally and at pleasure." One hundred and one essays were presented, and amongst them one by M. Le Normand, of Montpelier, proposing to employ steam. A boiler was to be heated by a large lamp in the car. Steam was to be conducted by tubes up to the equator of the balloon, and was to escape at each side of it through a horizontal tube at right angles with the diameter. This was thought to be the best plan amongst the whole of those received by the academy, but unfortunately one thing had been overlooked, or perhaps had not yet been made known. A balloon, in passing from one current of air to another, revolves on its axis, and therefore, instead of going in one direction, it would go in many directions perhaps not desired. We must have some lighter power than a steam-engine for propelling a balloon: the weight of the boiler, full of water, &c., would be objectionable. AERO.

GUIDANCE OF BALLOONS.—Another attempt is being made at Paris to apply the principles of piscatory locomotion to ballooning. A completely fish-shaped balloon has been formed at the Hippodrome, with two small rudders for a tail, one for steering in ascent and descent and the other in horizontal movement. The fins are represented by two short and wide oars, moved by a simple mechanism. The whole apparatus is banded with whalebone, and covered with network. The model is rather diminutive, measuring 5 yards only in length, and containing 1,200 litres of gas; but experiments with it are said to have been remarkably successful. The (re-) inventor is a M. Arnault.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—A public meeting was held November 13th, Mr. T. J. Pettigrew, V.P. in the chair. Exhibitions were contributed, by Mr. H. W. Rolfe, a drawing of a very early spur; by Mr. C. R. Smith, British coins and gold coins of Justinian; by Mr. Russell, seals, one reading "Crede Michi," discovered Nov. 8, 1850,—all these were found in the Thames;—by Mr. Warren, a bronze weight, having a lion passant on one side and a castle on the other, with an obscure inscription: Mr. Planché suggested that it might have belonged to the city of Norwich;—by Mr. Bell, of Gateshead, rubbings of inscriptions from bells and other antiquities, which had been bought by a dealer in old metals at Newcastle; by Mr. Forster, carvings of animals, foliage, &c., found on the back of the chimney-piece of the Old Queen's Head at Islington, when that house was pulled down, and which would belong to about the time of Henry VII. Dr. Bell read a paper on the history of famous Stones which have been used at various periods in the coronation of kings, and for other important national purposes, showing that these were usually surrounded by others, frequently of a smaller size, on which sat the officers of state or other important personages; and that such collections of stones are not only mentioned in the earliest histories, but are to be found in every country both in the old and new worlds. Many interesting facts were mentioned respecting the combination of particular numbers in the arrangement of these monuments. The history of the coronation stone at Kingston, and that in the coronation chair at Westminster, formed an important part of the paper.

NEW CHURCH, MARGARET-STREET.—Sir: I am requested by some of the principal subscribers to the church about to be erected on the site of Margaret Chapel, Margaret-street, to forward to you the following particulars with reference to your notice respecting the laying of the first stone. 1. It is not "Mr. A. B. Hope's church," but is to be built by subscription, Mr. Hope being only one out of several liberal contributors. 2. The architect has not *carte blanche* for the expense. The edifice will be constructed under contract in the usual way for a limited sum. 3. No "two religious houses," in the sense in which these words appear to be used, are to be built. Two houses are to be erected; one for the residence of the clergy, and another for the choir and the schoolmaster, in an ordinary mode.—JOHN DAVID CHAMBERS,—one of the treasurers of the subscription fund.

TERRA COTTA DECORATIONS.—Messrs. Bowers and Baddeley, of the Staffordshire potteries, have recently submitted to us some architectural decorations made from a combination of Staffordshire clays. The clay when properly mixed is subjected to a great pressure, in order to drive out the fixed air: having undergone this process, the clay is moulded and baked in the usual mode of baking earthenware. From the great pressure employed in the process of preparing the clay and in moulding it, as well as from the effect of certain ingredients employed in the process, the clay after having been baked assumes a perfectly vitreous character, and loses its absorbent properties. Bricks and ornaments of all kinds thus formed are impervious to wet, while from their non-absorbent qualities they may easily be painted. In work of this description the difficulty is to prevent warping and obtain straight lines. The patentees, however, speak with confidence of their ability in this respect. A good field is open to them.

PORTLAND HARBOUR OF REFUGE.—We understand that a number of additional tram-waggons have lately been received at the works, with a view to the employment of a still larger number of convicts, on the arrival of whom this enterprise will be carried on with increased rapidity. Amongst the machinery to be observed on these works may be mentioned a gigantic crane, on a moveable platform, intended for the raising of stones from the recesses of the quarries, and which is capable of sustaining, with ease, the weight of sixty tons. An engine has also been recently erected for the chemical impregnation of the driving piles for their preservation, by a new and ingenious process, by which they are rendered impervious to the action of water.

WIDENING OF CHANCERY-LANE. — A meeting of the inhabitants of Chancery-lane and its neighbourhood, was held at the Mechanics' Institute, in the lane, Mr. Taylor in the chair, when a committee was appointed, and resolutions were unanimously passed, recommending a public subscription to make up the sum requisite to open the Holborn end of the lane (in all 2,000*l.*) and expressive of the regret of the meeting at the want of some public institution for the removal of public nuisances, such as the obstruction in question. The chairman had already collected upwards of 150*l.* and the pavement commissioners, we believe, are still ready to contribute 750*l.*; so that the negociation with Mr. Steel for the corner space at 1,000*l.* appears to be already secure.

"Stop Thief."*—Our great moralist and joke-sketcher, George Cruikshank, has published a small pamphlet under this heading, the object of which is to lead housekeepers to hold their own against housebreakers. He will startle some of his readers by the exposition he gives of the means and appliances possessed by the burglar; but if he lead them, in consequence, to examine and reform the fastenings of the doors and windows, his end will be answered. He points out particularly the value of the thumb-screw and the wedge for securing doors and shutters. He recommends iron hooping nailed at the back of the panels, and suggests that young ladies, when they feel fatigued with their crochet work, should form some pretty pattern on the panels of the parlour shutters in *nail-work*. "With a sweet little dear of a basket of nails and a little love of a hammer, they might (taking care not to knock their dear little fingers) do their papas and mammas good service,—for the housebreakers' sharp-cutting instruments dislike to meet a *nail* as much as anything."

International Exhibition Prizes.—The Goldsmith's Company have decided to award 1,000*l.* for prizes to artists of the craft of the United Kingdom who can produce works of the highest design and merit, in gold and silver plate, for the Exhibition of 1851. The 1,000*l.* is to be divided into prizes varying from 300*l.* to 20*l.* and 10*l.* for works of a costly description, which probably will be eventually purchased by the company. There will be candelabra, church plate, services, and smaller objects. The assistance of several noblemen and gentlemen of known taste in the fine arts is to be obtained to aid the court in judging and awarding the prizes.

Cheap Motive Power. — Supposing there was a well or reservoir of water near a building where manufacturing power was required, and that the wind was employed for raising or pumping this water into another reservoir situated at the top of the building, or some other convenient elevation; the water thus raised might be made to fall through a pipe connected with a hydraulic engine at the base; and the power so obtained made to turn machinery of any kind—its intensity and equality of action being regulated according to necessity. The power of the wind to raise the water might be employed when available, either day or night; but the descent of the water only when needed. The water, of course, would be made to fall into the same reservoir from which it was raised, and thus be used over and over again.— *Mining Journal.*— [A suggestion none the worse for not being new.]

City Improvements.—It is intended, by a new Act to be applied for in the ensuing session of Parliament, amongst other purposes, to take power, with consent of the cathedral authorities, "to lay part of the ground area or space in the west front of St. Paul's Cathedral into the public street," and also to compel the consumption of smoke in all furnaces and fireplaces used for manufacturing or trade purposes; and to remove more effectually other nuisances, encroachments, obstructions, projections, and annoyances. Various additional powers to the Sewers Commission with respect to sewers, slaughter-houses, &c. are also to be applied for.

Railway Jottings.—The railway explosion at Birmingham, noticed in our last, is now generally believed to have resulted from foul air, generated, as in coal-pits, in the recesses of piers of the arches, there being no air passages through many of them.——The London and North-Western Company are contemplating laying out a large plot of surplus land at Pinner (13½ miles from London) as a park, in which villas of a respectable character will be erected. They propose to give to the purchaser of each plot of ground the privilege of a free ticket terminable at the end of so many years, in order to afford parties from London facilities in the erection and habitation of substantial dwellings at the above place. The London and North-Western Company have at present less suburban travelling than most of the other metropolitan railways, and the course now proposed will assist in developing this important source of revenue.——"A very interesting and highly satisfactory experiment," says a contemporary, "was made on the sinking of one of the cylinders of the new iron bridge erecting across the Shannon by the (Irish) Midland Great Western Railway Company. These cylinders had been previously sunk by excavating and removing the interior, and forced down by their own weight and such additional weight as was found necessary; but in this instance a method which has been found successful by Messrs. Fox, Henderson, and Co., the contractors for the bridge, on many occasions, but which has not hitherto appeared applicable to the structure in question, was resorted to. [The well-known process of the late Dr. Potts, using atmospheric pressure, is here described.] The effect was as though many tons weight had suddenly fallen on it, for the whole rapidly descended between five and six feet into the ground until checked by the obstruction of a piece of timber. The sinking of this cylinder, ten feet in diameter, through hard yellow clay did not occupy more than a few seconds."

Wandle Water and Sewerage Company. — A preliminary announcement has been made of the formation of a company to supply Brixton, Clapham, Dulwich, Norwood, Sydenham, Wandsworth, Battersea, Putney, Lambeth, Walworth, Camberwell, Peckham, and other districts South of the Thames, with water; to provide public baths and washhouses, and public conduits; to improve the sewerage and sanitary condition of Croydon, Carshalton, Morden, Mitcham, Merton, Wimbledon, Tooting, Streatham, Wandsworth, and other places through or near which the river Wandle flows.

Electro-telegraphic. — The Submarine Telegraph Company between Great Britain and Ireland, have advertised notice of application to Parliament in the ensuing session, for an Act of incorporation. The Submarine Telegraph Company between England and France have issued a similar notice. The European and American Printing Telegraph Company (Mr. Jacob Brett, of Hanover-square's patent) and the Magneto-Electric Telegraph Company have also announced the like intention to apply for incorporation, and for power to purchase and use patents.

A Flue of Flues.—In course of operations in the Tamar Silver Lead Mines, on the borders of Devon and Cornwall, it became latterly essential either to erect a powerful steam-engine at the foot of a subterranean inclined plane, 2,000 feet in length, and running right below the river which flows over the mine, to a perpendicular depth of 800 feet below its bed; or, failing that, to shut up the mine and throw 1,500 people out of employment. It was, therefore, determined to adopt the former alternative, and a 20-horse steam-engine, one of the patent combined hydraulic engines from Walker's manufactory at Oliver's-yard, City-road, was accordingly fitted up at that depth. Flues were, of course, requisite, and it was found advisable to conduct these across to the furthest bank of the river, and in a series of horizontal levels united by perpendicular shafts, so that the flue in sections rises like a flight of stairs to the surface. This flue is no less than two miles long and upwards, probably the longest flue in the world. The result was quite successful, as will appear from the following statement:—"We drew through Spurgin's shaft in October month 2,988 kibbles of stuff with Walker's new underground engine: this machine is well constructed, and I have every reason to believe she will pump the shaft 150 fathoms deeper than it is at the present time. We have in these mines six steam-engines at work at the surface, but the draught of the underground engine exceeds the whole. The consumption of coals is 5 cwt. in the twenty-four hours."

The Iron Trade is still in *statu quo*, and we need only refer for particulars to our last report on "the beginning of the end," the truth of which has been rather singularly confirmed within the last ten days by the fact that a Welsh paper in the trade interest, the *Carmarthen Journal*, pays us the compliment of adopting it in the slump as its own view of the present state and prospects of the trade, while a Birmingham contemporary quotes it honourably from the Welsh, in corroboration of *its* despondent views. The latter is of opinion that "a united and determined effort on the part of the ironmasters as a body, *might* go far to disarm the struggle, and to place the trade in a more healthy condition; but unfortunately an opposite disposition seems to prevail both here and elsewhere." That is precisely what we reprobated. But we fear that where some *must* go to the wall in order that others may live, it is no easy matter to act in concert, unless it be to draw lots for the casting of the poor Jonahs overboard. Exhibition castings, a mere morsel among so many hungry mouths, are absolutely almost all that the trade at large has at present to boast of in the shape of full employment. "The make, therefore, *must* be reduced, and if *competition* is about to decide to what extent this reduction will be carried in each locality, the result must be ruinous indeed."

Improvement in Lighthouse Apparatus.—We understand that the Royal Scottish Society of Arts have awarded their highest prize, the "Keith Premium," value thirty guineas, to Mr. Thomas Stevenson, civil engineer, for his improvements in lighthouse apparatus. The name "holophotal" has been applied to his system.—*Edinburgh Register.*

English Copper in Metallic Masses.—North Wales appears to be envious of the renown of North America for immense conglomerates of metallic copper, and determined to vie with them. At a new mine (the Graftnaut) near Harlech, N. W., a fine lode of solid copper, 3 feet wide, has been discovered at various points on the surface to the distance of several hundreds of yards, and latterly in the deep adit level in course of excavation, and at a depth of about 20 fathoms! The mine is in the hands of a small company.

Drainage Plans for Bangor.—In reply to the invitation from the local Board of Health to submit tenders for the survey and mapping of the borough of Bangor, thirty tenders were received, varying from 50*l.* to 500*l.* At a meeting last week, after about an hour and a half's consultation as to the merits of the different candidates, the votes were taken by the chairman, when the unanimous decision was in favour of Mr. E. Johnson, civil engineer, whose tender was 150*l.*

Relic of the Crusades.—Ascertaining that there was a stone fragment (which had been found some years ago in Francis-court, situated a few yards south of St. John's Gate) existing in a comparatively modern wall close by, I procured possession of it; and after having removed many coats of paint, I discovered that it was of Caen-stone, and had originally formed part of a Norman building: deeply-cut zig-zag mouldings are upon the fragment, having foliage and *escallop shells* alternately placed and boldly sculptured. Norman remains are often brought to light, and their usual characteristics well known; but the interest attached to the present relic consists in its being a part of the Priory founded in 1100; and this supposition may be inferred from the following: first, that previously to 1381, when St. John's Priory was destroyed by Wat Tyler, its buildings extended southward beyond the present gate; and, secondly, that escallop shells were assumed during the crusades, or after the return of the crusaders, in commemoration of these expeditions.

W. P. Griffith.

* Bradbury and Evans, Bouverie-street.

TENDERS

For St. James's Baths, London; Mr. P. P. Baly, engineer. Quantities taken out by Mr. Balam and Mr. Wright. As delivered June 14, 1850:—

Jefferys	£8,870
Paul	8,700
Walker and Soper	8,499
Pollock and McLennan	8,488
Higgs	8,470
Piper	8,237
Winsland and Holland	8,194
Hayward and Nixon	8,000
Curtis	7,894
Cooper, H. W.	7,922
Sanders and Woolcott	7,892
Myers	7,847
Burton, T.	7,839
Trego (accepted)	7,267

As delivered November 20, 1850, in consequence of a further application from the Commissioners to have fresh tenders for the same work, the previously accepted tender being dispensed with:—

Pilbeam	£8,500
Seal and Jackson	8,031
Higgs	7,995
Sanders and Woolcott	7,892
Burton	7,839
Pollock and M'Lennan	7,830
Myers	7,747
Cooper, H. W.	7,682

TO CORRESPONDENTS.

Map of London, &c.—The most *recent* map of London and its environs, so far as we know, is one published by Mr. Wyld, West Strand, which was corrected up to last year.

"R. and Son" (under our mark), "W. T." (ditto), "Mr. F.," "P. P.," "B.," "An Inventor," "R. M." "Subscriber from the first," "J. W. P.," "J. W." (next week), "L. B." (the partners would not pay income-tax for the business, if they have no other source of income), "O. P. Q.," "T. S.," "Liverpool" (declined, with thanks), "R. R. H." (maps of estates may be reduced by the "squares," as employed by engravers), "Landscape Gardener" (we notice any such competitions that come under our observation), "W. M. Y." (we are forced uniformly to decline), "T. L. C." (ditto), "G. R. F. (we have not seen the invention), "G. D.," "Advocate for truth," "W. P." (you could not recover), "J. L. W." "Messrs. F.," "T. B. L.," "A Subscriber," "T. G," (the architect was Mr. Scott), "T. F. F." (thanks), "J. L.," "P. H. G." (article has appeared), "W. L. S.," "Subscriber from beginning" (for peat charcoal, address, Mr. Rogers, Dublin). "Notices of Sepulchral Monuments in English Churches." By William Hastings Kelke, A. B. London, Charles Cox. Aylesbury, Pickburn.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

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October, 1850.

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NOTICE.—A Meeting of the Profession will be held at the Freemasons' Tavern, Great Queen-street, Lincoln's-inn-fields, on Wednesday, the 27th of November next. Chair to be taken at Three o'clock, precisely, for the appointment of Officers, &c., so that the objects of the Society may be carried out.

Information relative to the Society may be obtained of the Hon. Secretary, *pro. tem.*, by whom subscribers' names will be gladly received. By order of the Committee.
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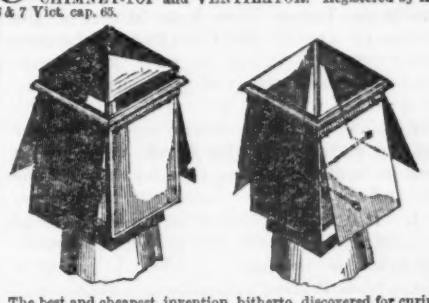

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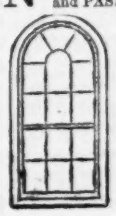

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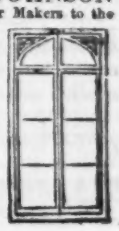

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Successors to
THE GALVANIZED IRON COMPANY,
Supply patent Galvanized Sheets, plain or corrugated, for roofing, &c., Water or Gas Pipes, Castings, Wire of all gauges, Guttering Hooping, &c. Wholesale, retail, and for export.
An allowance to the trade.

IRON BUILDING and ROOFING WORKS,
BIRMINGHAM, late of Southwark.
JOHN H. PORTER,
Manufacturer of the Corrugated and other kinds of Iron Roofing for railway stations, carriage sheds, farm buildings, gas-works, warehouses, factories, &c. &c.
PATENTEE
Of the Corrugated Iron Beams, Girders, and Fire-proof Floors.

THE PATENT GALVANIZING and CORRUGATING IRON COMPANY, Glasshouse-yard, opposite the principal entrance to the London Docks—Offices 12, Circus, Minories. J. SYMONDS and Co. Managers.
The proprietors have deemed it advisable to obtain a license to work Crawford's Patent, upon which they have made a very considerable improvement, and is acknowledged by the trade to be superior to any other process ever used. The facilities they possess in executing orders to any extent induce them to solicit the favours of contractors, builders, and others. On hand, for exportation or home consumption, patent galvanized plain and corrugated sheets, for iron houses, roofing, doors, verandahs, shutters, partitions, safety rooms, chests, &c., fitted. Iron guttering, water and gas pipes, hooping, wire of all sizes, chairs and seats for lawns, pleasure-grounds, and gardens, in great variety. Goods sent for and returned, free of charge, within three miles of the City; and all light goods received at the works by Nine in the morning, will be returned the same day if required.
A discount allowed to the trade.

TO BUILDERS, CABINET-MAKERS, and OTHERS.
Best Cut Sheet Flooring Brads, 11s. 6d. per cwt.
Fine Cut Clasp and Rose.
14s. 6d. 14s. 6d. 13s. 6d. 13s. 12s. 6d. per cwt.
1½ 1½ 2 2½ 3 inch.
Cross Garnet Hinges, per dozen pair.
2s. 9d. 3s. 3d. 4s. 3d. 5s. 6s. 8s.
10 12 14 16 18 20 in.
Best Bright Tower Bolts, per doz.
1s. 3d. 1s. 7d. 2s. 2s. 6d. 2s. 10d. 3s. 3d. 3s. 7d.
3 4 5 6 7 8 9 in.
Iron Rain-water Pipe.
9d. 10d. 1s. 1d. 1s. 5d. 1s. 8d. per yard.
2 2½ 3 3½ 4 inch.
Best London Glue, 38s. per cwt.
Cast Lath Nails, 10s. per cwt.
Air Bricks, 3s. 6d. per doz.
Hooping for bond, 8l. 10s. per ton.
Sash Weights, 5s. per cwt.
TERMS—NET CASH.
A price-list may be had on application.
A. L. PFEIL and Co.,
Wholesale Ironmongers, Brass Foundry and Nail Warehouse,
5 and 6, Broad-street, Bloomsbury, London.
AGENTS FOR LEA'S PATENT MORTISE LOCKS AND BOLTS.

TO BUILDERS and CARPENTERS.—
Elliptic Stoves, double backs, 3½d. per inch.
Register Stoves, 5d. 6d. 6½d. 7½d. per inch.
Self-acting Ranges, with circular ovens and back boilers, best wrought bars and bright fittings—
3 ft., 2l. 18s. 3 ft. 6 in., 3l. 7s. 4 ft., 3l. 15s.
3-feet Cottage Ranges, with ovens and back boilers, 33s. each.
3-feet self-acting ditto, ditto ..... 35s. each.
Air Bricks, 3s. 6d. per doz.—1-inch Cut Lath Nails, 13s. 6d. per cwt.
Best Patent Cut Clasp.
1½ 1¾ 2 2½ 3 inch and larger,
14s. 6d. 14s. 13s. 12s. 6d. 12s. per cwt.
Best Sheet Floor Brads, 11s. 6d. per cwt.
Best Town Glue, 38s. Ditto, Scotch, 32s. per cwt.
Best Patent Sash Line.
1 2 3 4 5 6
4s. 4s. 6d. 5s. 6d. 7s. 8s. 10s. 6d. per gross.
At F. R. WILLIAMSON'S IRONMONGERY and STOVE WAREHOUSE, 35, Chiswell-street, Finsbury-square.
Lists of Prices had on application at the Warehouse, or by letter, pre-paid, inclosing postage stamp.—Warehouse closes at 7 o'clock.

CLARK and HUNT'S IRONMONGERY, STOVE and METAL WAREHOUSE, 139, Shoreditch.
Strong Elliptic Stoves, with extra back, 2½d. per inch.
Register Stoves, 5d. per inch.
3-ft. Self-acting Cottage Ranges, with Oven and Boilers, 36s. each.
3-ft. Self-acting ditto, with wrought bars and bright fittings, 58s. ea.
Cast Rain-water Pipe { 2 2½ 3 inch. / 8d. 10d. 1s. per yard.
Cast Gutters—4 inch, 8d. per yard.
O.G. Gutters ..... { 4 4½ inch. / 11d. 1s. per yard.
Best Cut Clasp { 1½ 1¾ 2 2½ 3 inch. / and Rose { 14s. 6d. 14s. 13s. 6d. 13s. 12s. per cwt.
Sheet Flooring Brads, 11s. 6d. per cwt.
1-inch Cut Lath, 14s. Cast Lath, 9s. 6d.
6-inch 3-Bolt Rd. Ward Mortice, with best Furniture and Patent Spindles, 2s. 9d.
Light Elliptic and Register Metal, 12s. per cwt.
Hot Water Pipes, 8s. 6d. per cwt.
Dr. Arnott's Ventilators, 5s. each.
An extensive stock of bar, rod, hoop, and sheet iron.

TO BUILDERS AND CARPENTERS, &c.

J. H. BOOBBYER and CO., late Sturch and Boobbyer, Ironmongery, Brass Foundry, Nail, and Tool Warehouse, No. 14, Stanhope-street, Clare-market, London, for the supply of Carpenters, Builders, Cabinet-makers, Upholders, &c., at wholesale prices.
Best Cut Sheet Flooring Brads, 11s. 6d. per cwt.
Fine Cut Clasp and Rose.
14s. 6d. 14s. 6d. 13s. 6d. 13s. 12s. 6d. per cwt.
1½ 1¾ 2 2½ 3 inch.
Best Bright Tower Bolts.
1s. 3d. 1s. 7d. 2s. 2d. 2s. 6d. per dozen.
3 4 5 6 inch.
Best Patent Sash Line.
4s. 4s. 6d. 5s. 6d. 7s. 8s. 10s. 6d. per gross.
No. 1 2 3 4 5 6
Cast Lath Nails, 10s. per cwt. Air Bricks, 3s. 6d. per dozen.
DR. ARNOTT'S VENTILATORS.
10 by 8 inches ..... 8s. each.
16 by 9 „ ..... 8s. „
An assortment in Brass, Bronzed, Gilt, &c.
An extensive stock of Mortise Locks, Drawback Locks, Iron Rim Locks, and Latches, of every description, at very reduced prices; also Door Furniture, in china, amber, crystal, ivory, ebony, buffalo, horn, brass, &c., with Finger-plates, Bell-pulls, and Levers *en suite*.
B. and Co. are the inventors of SHIFTING BOLT MORTISE LOCKS, &c., so universally approved of.—Established nearly 200 years, for the supply of goods from the best manufactories at the lowest prices.

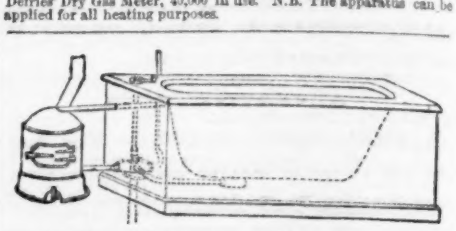
TO BUILDERS, CARPENTERS, &c.—
The undermentioned are the PRESENT PRICES of IRONMONGERY, at YOUNG'S, 194, Oxford-street. Every other article equally low. Orders executed upon receipt of remittance or a respectable London reference.

		2	2½	3	Inches.
Cast Butts.....	5s. 3d.	7s. 6d.	11s.	per 6 dozens.	
Cut Clasp.....	5d.	7d.	1s. 2d.	1s. 8d.	per
	4d.	6d.	10d.	20d.	£1,000.
Nos.	3	4	5	6	
Patent Line	5s. 6d.	7s.	8s.	10s. 6d.	per gross.
	2	2½	3 Inches.		
Rain Pipe	9½d.	10½d.	1s. 1d.	per yar	

WARMING.—A BARGAIN.—To b DISPOSED OF at considerably less than half thei cost, TWO nearly new handsome pedestal WARM AIR STOVES 5 feet 7 inches high, 3 feet 6 inches diameter; require no brick work, can be placed in any situation, are very economical, and require but little attendance; adapted for churches, chapels, schools, warehouses, or any large building.—For further particulars apply by letter to J. W. BROWN, 2, York-street, Covent-garden.

WARMING BY HOT WATER.—J. WEEKS and Co., KING'S-ROAD, CHELSEA, solicit the honour of Architects to inspect their Hot-Water Apparatus, which is to be seen on their premises, in extensive operation. Ornamental Pedestals and Stacks of Pipes in great variety, applicable for warming churches, mansions, entrance-halls, offices, conservatories, &c.—TUBULAR BOILERS of all sizes, warranted to be the most efficient and economical of any yet introduced.—J. WEEKS and Co., Hot-Water Apparatus Manufacturers, King's-road, Chelsea.

DEFRIES' PATENT GAS BATH.—By the use of the above, a HOT BATH can be obtained in six minutes for less than twopence. Every family should provide itself with this invaluable requisite, its limited cost placing it within the means of all, and its simplicity within the management of a child.—DEFRIES' ECONOMIC GAS COOKING STOVES are adapted for all establishments, large or small, and need only to be seen to be appreciated for their cleanliness and economy, entirely dispensing with all coal. To be seen daily in operation (Saturday excepted) at 221, Regent-street, and also in action.—Defries' Dry Gas Meter, 40,000 in use. N.B. The apparatus can be applied for all heating purposes.



BATHS.—J. TYLOR and SON'S improved APPARATUS, consisting of copper or galvanized iron baths, coated with enamelled white or Sienna marbles inside, copper circulating boiler, with three-way cock for hot, cold, and waste water, complete, IS MOVEABLE, and does not require any BRICK-WORK. Manufacturers of every description of boilers and coil pipes for heating baths or public buildings, hospitals, union workhouses, asylums, &c.—Apply to Ironmongers or Plumbers, or to the Manufacturers, Warwick-lane, London.

FRENCH CASTINGS.—SAMUEL HOOD and Co. respectfully invite the attention of Architects and others to their stock of French Castings, consisting of balcony panels, balconets, panels for gates, staircase bars, newells, knockers, &c. combining the greatest beauty of design, with economy of material.—Castings Warehouse, 81, Upper Thames-street.

TO BUILDERS AND FLORISTS.

IRON PIPES for hot-water circulation, with Boilers, Fittings, and every connection, at wholesale prices. RAIN-WATER PIPES, eave and O G gutters, air bricks, sash weights, and railing bars; STABLE FITTINGS, pumps, lamp columns, wrought-iron tubing and under-ground pipe of all sizes, and on the above terms, at LYNCH WHITE'S Iron Wharf, 66, Bankside, London.

TO BUILDERS AND OTHERS.

A QUANTITY of RAILING BARS to be SOLD, at 6l. per ton, and some BALCONY PANELS, at 8l. per ton, at J. JONES'S Iron Wharf; also a large stock of Rain-water Pipes, Gutters, Sash-weights, Coal-plates, Scrapers, Tile-lights, Barrow-wheels, Stable-fittings, &c. &c., at the same low prices. J. JONES, Iron Merchant, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge. Prices forwarded on application.

IRON FOUNDRY, 80, Goswell-street (late of Brick-lane, St. Luke's).—J. J. JONES having made great additions to his STOCK of PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.
BAKERS' OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

FOUNDRY AND IRONWORKS,
168, DRURY-LANE, and CHARLES-STREET, DRURY-LANE.
GLOVER, BROS.,
Solicit the attention of the Trade to their extensive Stock of PATTERNS for CASTINGS of EVERY DESCRIPTION, either structural or ornamental.
Patterns of Girders, Columns, Balconies, Railing, Ornamental Carriage and Park Gates, Lamp and Street Posts, Tanks, Pipes, Wheels, Pinions, Lathes, and Steam-engines; Range and Hot-plate Metal. An improved Soot Door adapted for internal work.
A large stock of Rain-water Pipes, Plain and O G Gutters, Air-bricks, Sash Weights, Air-tight Sewer Grates, Stable Fittings, Hurdles, &c.
Plain and Ornamental Vases 20 per cent. cheaper than Terra-cotta.
Estimates given for Iron Buildings, Wrought-iron Roofing, Greenhouses, Staircases, Wrought-iron Girders, Fireproof Doors, Book Safes and Strong Rooms, Tanks and Boilers and every description of ironwork to specification, and the work executed with every attention to quality and despatch.
GLOVERS' IRONWORKS,
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CHUBBS' LOCKS, FIRE-PROOF SAFES, AND CASH BOXES.

CHUBBS' PATENT DETECTOR LOCKS give perfect security from false keys and picklocks, and also detect any attempt to open them. They are made of all sizes, and for every purpose to which locks are applied, and are strong, secure, simple, and durable.
CHUBBS' PATENT LATCH, for front doors, counting-house doors, &c., is simple in construction, low in price, and quite secure. The keys are particularly neat and portable.
CHUBBS' PATENT FIRE-PROOF SAFES, BOOKCASES, CHESTS, &c., made entirely of strong wrought-iron, so as effectually to resist the falling of brick-work, timber, &c., in case of fire, and are also perfectly secure from the attacks of the most skilful burglars.
CHUBBS' CASH and DEED BOXES, fitted with the Detector Locks.
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LEADBEATER, FIREPROOF SAFE and DETECTOR LOCK MANUFACTURER to HER MAJESTY'S BOARD of ORDNANCE.
LEADBEATER, many years Manufacturer for Chubb.
LEADBEATER'S strong wrought-iron FIREPROOF BOOK SAFES, CHESTS, DOORS for STRONG ROOMS, PLATE CLOSETS, PARTY WALLS, &c., all of the best make, secured by LEADBEATER'S IMPROVED DETECTOR LOCKS, and possessing all the most recent improvements, afford PERFECT SECURITY against Fire and Thieves. Extra Strong Cash and Deed Boxes, &c., sold at prices which place them within the reach of all classes.
LEADBEATER'S IMPROVED DOUBLE-ACTION COMBINATION LATCHES, for securing street and office doors, cannot be opened by false keys or picklocks.
A large assortment on hand of all sizes and fitted for every purpose at LEADBEATER'S FIREPROOF SAFE and DETECTOR LOCK MANUFACTORY, 135, ALDERSGATE-STREET, CITY, LONDON.—Estimates sent by return of post.
A vacancy for an apprentice—a small premium required.